

**REMARKS**

Claim 56 is added, and therefore claims 27 to 33 and 35 to 56 are pending in the present application (since claim 34 was previously canceled).

*The Office Action refers to claims 27 to 55, but claim 34 was previously canceled.*

In view of the following, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicant thanks the Examiner for acknowledging the drawings and the claim for foreign priority, and for indicating that all of the certified copies of the priority documents have been received.

Claims 27 to 33, 35 to 41, and 55 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,515,589 ("Schneider") in view of U.S. Patent No. 4,769,550 ("Dolnick") in further view of U.S. Patent No. 5,381,130 ("Thuillard").

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Also, as clearly indicated by the Supreme Court in *KSR*, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

While the rejections may not be agreed with, to facilitate matters, claim 27 has been rewritten to better clarify the claimed subject matter.

Claim 27, as presented, is to a fire detector, comprising: a first radiation transmitter and a first radiation receiver having a first beam path that forms a first scattering volume; *a second radiation transmitter and a second radiation receiver having a second beam path that is parallel to the first beam path and forms a second scattering volume, in which the first scattering volume and the second scattering volume are spatially separated and do not overlap*, in which the first radiation transmitter and the second radiation transmitter are oriented in a by an angle of  $180^\circ$  from one another, and wherein the first radiation receiver and the second radiation receiver are oriented  $180^\circ$  from one another; and a microcomputer to selectably control the first radiation transmitter and the second radiation transmitter, the microcomputer analyzing the first scattering volume and the second scattering volume through an analog-to-digital converter.

In particular, claim 27, as presented, provides that *the first and second beam paths are parallel with each other and do not overlap*. This subject matter is not disclosed or suggested by any of the Schneider, Dolnick, or Thuillard references, whether taken alone or combined. As admitted on page 3 of the Office Action, Schneider does not disclose multiple emitters or receivers, so that it cannot disclose a second beam path. The secondary Dolnick reference specifically teaches away from a first beam path being parallel to a second beam path, as provided for in the context of the presently claimed subject matter. In Figure 1 of the Dolnick reference, the paths from the light sources are clearly overlapping, so that Dolnick does not disclose in any way that the first and second beam paths are parallel to each other, as provided for in the context of the presently claimed subject matter. (See Dolnick, Fig. 1).

Additionally, the Thuillard reference does not disclose or suggest a second beam path, since two detectors are oriented so that they overlap with the output of a radiation source. (See Thuillard, Fig. 2). Based on the placement of the detectors directly across from each other, an additional beam path could not be parallel to a first beam path.

Further, Dolnick does not disclose a second scattering pattern that is spatially distinct from the first scattering pattern. Figure 1 of the Dolnick reference concerns two scattering regions which are not spatially separate and which make up a single scattering region. (See Dolnick, Fig. 1). Even if the Dolnick reference did indicate that the scattering region (reference item 6) may be broken up into separate regions for each of the detectors, it

does not disclose or suggest that these two scattering regions do not overlap. As understood, the Dolnick reference indicates that the two scattering regions may not include the exact same scattering volume as each other. (See Dolnick, col. 2, lines 42-45). Based on the orientation of the light sources and detectors in Fig. 1, Dolnick indicates that it is not possible for two scattering regions to not overlap.

As presented, claim 27 provides that the first scattering volume and the second scattering volume do not overlap.

Furthermore, Dolnick does not disclose a radiation transmitter and a radiation receiver, since it explicitly discusses the presence of multiple light sources and light detectors. Accordingly, Dolnick does not disclose that the light detectors are radiation receivers, which may have separate and distinct characteristics.

Claim 27, as presented, is therefore allowable, as are its dependent claims 27 to 33, 35 to 41, and 55.

Claims 42 to 54 were rejected under 35 U.S.C. § 103(a) as unpatentable over Schneider, Dolnick, and Thuillard in view of U.S. Patent 6,218,950 ("Politze").

While the rejections may not be agreed with, to facilitate matters, claim 42 has been rewritten.

Claim 42, as presented, is to a method for operating a fire detector, the method comprising: checking the fire detector for operability; performing a function check of a set of transmitters and a set of receivers; obtaining scattered radiation measured values from two different scattering volumes formed from parallel beam paths of the set of transmitters and receivers; comparing the scattered radiation measured values to one another; inferring a presence of smoke and a source of fire if the scattered radiation measured values are generally equal; determining a type, a size, a distance and a color of the smoke; and inferring a presence of an interfering body in a scattering volume if the scattered radiation measured values deviate from one another.

The Politze reference (as well as the other applied references) does not disclose the feature of parallel beam paths that form the scattering patterns, as provided for in the context of the presently claimed subject matter. The Politze reference also does not disclose the feature of comparing actual measured scattered values, since Politze specifically discusses comparing a ratio of two scattered radiation signals to a predetermined ratio. (See

Politze, col. 2, lines 16-19). It is respectfully submitted that comparing a ratio of two signals to a predetermined ratio is wholly different from comparing two scattered values with each other. A ratio of two radiation signals only concerns a relative ranking of each signal to the other. In this regard, a situation in which the two measured scattered values are both abnormally high would be ignored if the ratio is still in conformity with the predetermined ratio.

Accordingly, claim 42, as presented, is allowable, as are its dependent claims 43 to 54.

As further regards all of the obviousness rejections, any Official Notice is respectfully traversed to the extent that it is maintained and it is requested that the Examiner provide specific evidence to establish those assertions and/or contentions that may be supported by the Official Notices under 37 C.F.R. § 1.104(d)(2) or otherwise. In particular, it is respectfully requested that the Examiner provide an affidavit and/or that the Examiner provide published information concerning these assertions. This is because the § 103 rejections are apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no support was provided for these otherwise conclusory and unsupported assertions. (See also MPEP § 2144.03).

Accordingly, claims 27 to 33 and 35 to 55 are allowable.

New claim 56 does not add new subject matter and it is supported by the present application, including the specification. Claim 56 depends from claim 1, and it is therefore allowable for the same reasons, and for the further reason that it includes the feature of *a switching arrangement connecting the first radiation receiver and the second radiation receiver to an electronic circuit system only when the first radiation transmitter and the second radiation transmitter emit radiation*. This feature is not disclosed or suggested by the applied references.

In particular, claim 56 includes *a switching arrangement to connect the first and second radiation receiver to the electronic circuit system only when the first and second radiation transmitter begin to emit radiation*, which is not disclosed or suggested by any of the applied references, whether taken alone or combined. The Thuillard reference does not

disclose or suggest this feature. In Thuillard, two operational amplifiers 16 and 17 are directly connected to the radiation detectors 7 and 8. (See Thuillard, Figs. 6-7).

Accordingly, Thuillard does not disclose or suggest *a switching arrangement to connect the first and second radiation receiver to the electronic circuit system only when the first and second radiation transmitter begin to emit radiation*, as provided for in the context of the presently claimed subject matter. Claim 56 is therefore allowable for this further reason.

Accordingly, claims 27 to 33 and 35 to 56 are allowable.

### CONCLUSION

In view of the above, it is respectfully submitted that all of presently pending claims 27 to 33 and 35 to 56 are allowable. It is therefore respectfully requested that the rejections (and any objections) be withdrawn. Since all issues raised by the Examiner have been addressed, an early and favorable action on the merits is respectfully requested.

Respectfully submitted,

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